

REMARKS

Applicants thank the Examiner for the thorough examination given the present application.

Status of the Claims

Claims 1, 2, 4-8, 13, 15, 16, 18, and 19 are currently pending in the present application. Claim 6 has been amended. Support for the recitations in claim 6 can be found in the present specification, *inter alia*, at page 7, lines 21-23. Thus, no new matter has been added. Based upon the above considerations, entry of the present amendment is respectfully requested.

In view of the following remarks, Applicants respectfully request that the Examiner withdraw all rejections and allow the currently pending claims.

Issues under 35 U.S.C. § 103(a)

The Examiner has rejected claims 1-2, 4-8, 13, 15-16, and 18-19 under 35 U.S.C. § 103(a) as being unpatentable over Kobayashi et al. '073 (US 6,054,073) in view of Imono. Applicants respectfully traverse. Reconsideration and withdrawal of this rejection are respectfully requested based on the following considerations.

Legal Standard for Determining Prima Facie Obviousness

MPEP 2141 sets forth the guidelines in determining obviousness. First, the Examiner has to take into account the factual inquiries set forth in *Graham v. John Deere*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), which has provided the controlling framework for an obviousness analysis. The four *Graham* factors are:

- (a) determining the scope and content of the prior art;
- (b) ascertaining the differences between the prior art and the claims in issue;
- (c) resolving the level of ordinary skill in the pertinent art; and
- (d) evaluating any evidence of secondary considerations.

Graham v. John Deere, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966).

Second, the Examiner has to provide some rationale for determining obviousness. MPEP 2143 sets forth some rationales that were established in the recent decision of *KSR International Co. v Teleflex Inc.*, 82 USPQ2d 1385 (U.S. 2007).

As the MPEP directs, all claim limitations must be considered in view of the cited prior art in order to establish a *prima facie* case of obviousness. See MPEP 2143.03.

Distinctions Over the Cited References

Enclosed herewith is a 37 CFR § 1.132 Declaration of Mikio Sakaguchi, one of the present inventors. The Examiner is respectfully requested to review the enclosed Declaration of Mikio Sakaguchi as it provides strong evidence of the patentability of the present invention.

In the enclosed Declaration, additional test data, as shown in Table I, are set forth. Mikio Sakaguchi, in the enclosed Declaration, states:

It is verified in Table I that the molding sand of the present invention has a water absorption of at most 0.3% (in Examples, 0%, 0.04% and 0.1%), while CERABEADS #650 shown in IMONO has a water absorption of 0.45%.

It can be seen from Table I that if the molding sand has a low water absorption, the surface is compact, so that the molding sand itself has a high strength, thereby improving the strength of the mold (see page 7, line 21 to page 8, line 2 of the specification). In addition, when the molding sand is regenerated, since the molding sand has pulverization resistance, the regeneration efficiency also becomes high (see Test Example 3, Table 3).

It can be seen in Table I that the molding sand of Example 3 (water absorption: 0%), the molding sand of Additional Example A (water absorption: 0.04%), and the molding sand of Additional Example B (water absorption: 0.10%), each having a water absorption of at most 0.3%, have excellent pulverization resistance, as compared to CERABEADS #650 (water absorption: 0.45%) and Comparative Example 1 (water absorption: 1.2%), each having a water absorption exceeding 0.3%.

In addition, Table I also verifies that if the water absorption is low, the amount of the binder absorbed to the internal of the molding sand is suppressed, so that a high strength in the mold is exhibited with a smaller amount of a binder (see page 7, line 21 to page 8, line 2, Test Example 1 and Table 1 of the specification).

In summary, when comparing pulverization resistance, the present invention is unexpectedly superior. The comparative examples strongly evidence that the cited references do not produce the results of the present invention.

Relevant to this § 103(a) rejection, *Graham v. John Deere*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966) has provided the controlling framework for an obviousness analysis, wherein a proper analysis under § 103(a) requires consideration of the four *Graham* factors. One such factor includes the evaluation of any evidence of secondary considerations (e.g., commercial success; unexpected results). 383 U.S. at 17, 148 USPQ at 467. In this regard, Applicants respectfully submit that the present invention has achieved unexpected results, whereby such results rebut any asserted *prima facie* case of obviousness. *See In re Corkill*, 711 F.2d 1496, 226 USPQ 1005 (Fed. Cir. 1985). Also, the comparative showing need not compare the claimed invention with all of the cited prior art, but only with the closest prior art. *See* MPEP 716.02(b) and 716.02(e).

According to MPEP 2145, rebuttal evidence and arguments can be presented by way of a declaration under 37 CFR 1.132, *In re Soni*, 54 F.3d 746, 750, 34 USPQ2d 1684, 1687 (Fed. Cir. 1995). Office personnel should consider all rebuttal arguments and evidence presented by Applicants. *See, e.g., In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984) (“[Rebuttal evidence] may relate to any of the *Graham* factors including the so-called secondary considerations.”). Rebuttal evidence may also include evidence that the claimed invention yields unexpectedly improved properties or properties not present in the prior art. Rebuttal evidence may consist of a showing that the claimed compound possesses unexpected properties. *In re Dillon*, 919 F.2d 688, 692-93, 16 USPQ2d 1897, 1901 (Fed. Cir. 1990).

Thus, due to the unexpected results as achieved by the present invention, the rejection has been overcome. Reconsideration and withdrawal of this rejection are respectfully requested.

Moreover, the Examiner asserts that the water absorption feature of the present invention would be inherent to the particles of Imono. To support a rejection based on inherency, the Examiner must provide factual and technical grounds establishing that the inherent feature necessarily flows from the teachings of the prior art. The inherency *must* flow as a necessary conclusion from the prior art and cannot be simply a possible one.

In other words, for the Examiner to be correct, the exemplified embodiments of the cited references must have all the allegedly inherent features. As shown in the enclosed Rule 132 Declaration, Applicants respectfully submit that the “inherent” feature does not necessarily flow from the teachings of the cited references and that the exemplified embodiments of the cited references do not have all of the allegedly inherent features.

As stated in *KSR International Co. v Teleflex Inc.*, 82 USPQ2d 1385, 1396 (2007), “rejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” Furthermore, the mere fact that references *can* be combined or modified does not render the resultant combination obvious unless the results would have been predictable to one of ordinary skill in the art. *Id.* As described above, Applicants have shown that the present invention achieves unexpected and unpredictable results.

To establish a *prima facie* case of obviousness of a claimed invention, all of the claim limitations must be disclosed by the cited references. As discussed above, Kobayashi et al. ‘073 in view of Imono fail to disclose all of the claim limitations of independent claim 6, and those claims ultimately dependent thereon. Accordingly, the combination of references does not render the present invention obvious.

Furthermore, the cited references or the knowledge in the art provide no reason or rationale that would allow one of ordinary skill in the art to arrive at the present invention as claimed. Therefore, a *prima facie* case of obviousness has not been established, and withdrawal of the outstanding rejection is respectfully requested. Any contentions of the USPTO to the contrary must be reconsidered at present.

CONCLUSION

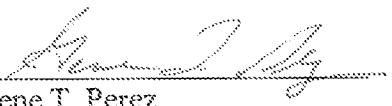
A full and complete response has been made to all issues as cited in the Office Action. Applicants have taken substantial steps in efforts to advance prosecution of the present application. Thus, Applicants respectfully request that a timely Notice of Allowance issue for the present case clearly indicating that each of claims 1-2, 4-8, 13, 15-16, and 18-19 are allowed and patentable under the provisions of title 35 of the United States Code.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Chad M. Rink, Reg. No. 58,258 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Dated: OCT 8 2009

Respectfully submitted,

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Attachment: Declaration under 37 C.F.R. § 1.132 of Mikio Sakaguchi